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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,250	05/29/2007	Tetsuo Nagano	P30562	1730
7055 7590 04/23/2010 GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191				
EXAMINER GERIDO, DWAN A				
ART UNIT 1797		PAPER NUMBER		
NOTIFICATION DATE 04/23/2010		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com

pto@gbpatent.com

### Office Action Summary

**Application No.**

10/598,250

**Applicant(s)**

NAGANO ET AL.

**Examiner**

Dwan A. Gerido, Ph.D.

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 March 2010.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.  
4a) Of the above claim(s) 1,2 and 6-12 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 3-5 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 29 May 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/GS/US)  
Paper No(s)/Mail Date 6-15-2007

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Applicant's election with traverse of claims 3-5 in the reply filed on March 12, 2010 is acknowledged. The traversal is on the ground(s) that the examiner has not shown that the claims lack unity of invention under PCT Rule 13.1 and 37 C.F.R. 1.475. This is not found persuasive because the claims recite compounds based on a general formula taught by the prior art (US 2006/0128961, paragraphs 0019, 0030, Dye D, Formula II). Because the general formula is taught, the claims as a whole do not provide a special technical feature that defines over the prior art.

The requirement is still deemed proper and is therefore made FINAL.

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lugade et al., (US 2004/0014981) in view of Narayanan (US 6,593,148).

6. Regarding claims 3 and 4, Lugade et al., teach a cyanine dye having the same general formula as that of the instant claims (paragraph 0008, formula I) wherein  $R_1$ - $R_5$  are independently hydrogen, alkyl, halo, carboxyl, amino, or  $SO_3^-$  (paragraph 0032,  $R_1$ - $R_5$  corresponds to  $R_{21}$ - $R_{24}$ ),  $R_9$ - $R_{12}$  and  $R_{14}$ - $R_{17}$  are independently hydrogen, alkyl, halo, amino, or sulfonato (paragraph 0038,  $R_9$ - $R_{12}$  and  $R_{14}$ - $R_{17}$  corresponds to  $R_{25}$ - $R_{28}$  and  $R_{29}$ - $R_{32}$ ),  $R_8$  and  $R_{13}$  are independently alkyl wherein the alkyl chain ranges from 1-50 carbons (paragraph 0037,  $R_8$  and  $R_{18}$  correspond to  $R_{33}$  and  $R_{34}$ ), Z is oxygen, sulfur, or  $NR_{35}$  wherein  $R_{35}$  is a hydrogen or alkyl (paragraph 0030), and X and Y are oxygen, sulfur, or  $CR_{19}R_{20}$  wherein  $R_{19}$  and  $R_{20}$  are alkyls and preferably lower alkyls (paragraph 0036, X and Y correspond to  $Y_{21}$  and  $Y_{22}$ ).

Lugade et al., do not teach a counter ion for neutralizing the charge of the cyanine dye.

Narayanan teaches a cyanine dye having the same general structure as that of Lugade et al., wherein  $X_1^\pm$  represents a counter ion with a charge ranging from -1 to +3 (column 4 lines 45-47). Narayanan teaches that it is advantageous to utilize a counter ion as a means of maintaining overall electrical neutrality of the dye compound (column 4 lines 45-47). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to

modify Lugade et al., in view of Narayanan to utilize a counter ion in order to maintain neutrality of the compound as taught by Narayanan.

7. Regarding claim 5, the combination of Lugade et al., in view of Narayanan teaches the claimed reagent (dye compound) thereby meeting the limitations of claim 5 as the claim only recites the intended use of the reagent and does not describe structural limitations to distinguish from the compound recited in claim 3.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwan A. Gerido, Ph.D. whose telephone number is (571)270-3714. The examiner can normally be reached on Monday - Friday, 9:00 - 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on (571) 272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DAG

/ROBERT J. HILL, JR/  
Primary Examiner, Art Unit 1797

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